

**Appendix N**

**RCRA Training Program**

**APPENDIX N**

**RCRA TRAINING PROGRAM**

## RCRA TRAINING PROGRAM

### TABLE OF CONTENT

- I. INTRODUCTION
- II. RCRA HISTORY BACKGROUND
  - A. What's RCRA ?
  - B. RCRA Components
  - C. RCRA Goals
  - D. RCRA Subtitles
- III. SLIDE SHOW: RCRA FACILITY PERSONNEL TRAINING
- IV. RCRA GENERAL OVERVIEW
  - A. Definitions
  - B. Potential Liabilities
  - C. Generator Standards
    - 1. Large Generator
    - 2. SQG
    - 3. Conditionally Exempt SQG
  - D. Transporter Standards
  - E. TSD Standards
  - F. Regulatory Deadlines
  - G. RCRA Permitting Process
- V. WASTE IDENTIFICATION AND CHARACTERIZATION
  - A. What is a Solid Waste ?
  - B. Listed Wastes
  - C. Characteristic Wastes
- VI. NEW REGULATIONS
  - A. Toxicity Characteristic & Leaching Procedure (TCLP)
  - B. Primary Sludge Rule
  - C. Air Emission Standards for Hazardous Waste Facilities
- VII. HAZARDOUS WASTE OPERATION AND MANAGEMENT
  - A. RCRA Storage Building Description
  - B. Hazardous Wastes Description
  - C. Containers Labeling
  - D. Waste Generation Recordkeeping Requirements
  - E. Inspection and Security Requirements
  - F. Contingency Plan
  - G. Manifest System

## RCRA TRAINING PROGRAM

### HISTORY BACKGROUND

AFTER WORLD WAR II, AMERICAN NATION EXPERIMENTED A PHENOMENAL INDUSTRIAL GROWTH WHICH BRINGS AS A RESULT, A TREMENDOUS PROBLEM: HOW TO MANAGE THE INCREASING AMOUNT OF WASTES PRODUCED BY INDUSTRY AND CONSUMERS.

IN 1965 U.S. CONGRESS CREATED THE SOLID WASTE DISPOSAL ACT. THE FIRST FEDERAL LAW THAT ENCOURAGE ENVIRONMENTALLY SOUND METHODS FOR DISPOSAL OF HOUSEHOLD, MUNICIPAL, COMMERCIAL AND INDUSTRIAL REFUSE. LATER ON THE CONGRESS AMENDED SUCH A LAW IN 1970 BY PASSING THE RESOURCE RECOVERY ACT AND AGAIN IN 1976 BY PASSING THE RESOURCE CONSERVATION AND RECOVERY ACT. ACTUALLY KNOWN AS RCRA.



There are several components of RCRA:

- Act — Describes, in statutory language, the kind of waste management program that Congress wants to establish. The Act also provides the Administrator of EPA (or his or her designee) with the authority to implement the Act.
- Regulations — The legal mechanism that establishes standards or imposes requirements to carry out the Act. Authority for developing regulations is found in the Act. Regulations are published in the Federal Register and codified in the Code of Federal Regulations.
- Guidance — Developed and issued by EPA (or the States) to provide instructions on how to implement requirements of either the Act or regulations.
- Policy — Statements developed by EPA (or the States) outlining a position on a topic or giving instructions on how a procedure should be conducted.

RCRA continues to change with amendments to the statute. These amendments significantly expand both the scope (e.g., the creation of Subtitle J) and detailed requirements of the Act.

## RCRA

### THE PRIMARY GOALS OF RCRA ARE:

- ° TO PROTECT THE HUMAN HEALTH AND THE ENVIRONMENT FROM ANY POTENTIAL HAZARD OF WASTE DISPOSAL
- ° TO CONSERVE ENERGY AND NATURAL RESOURCES
- ° TO REDUCE THE AMOUNT OF WASTE GENERATED, INCLUDING HAZARDOUS WASTE
- ° TO ENSURE THAT WASTES ARE MANAGED IN AN ENVIRONMENTALLY SOUND MANNER

## RCRA

RCRA, INCLUDING HSWA AMENDMENT IS DIVIDED INTO SECTIONS CALLED SUBTITLES.

SUBTITLE C - IS A PROGRAM ESTABLISHED FOR CONTROLLING HAZARDOUS WASTE MANAGEMENT FROM GENERATION TO ULTIMATE DISPOSAL. (CRADLE TO GRAVE SYSTEM.)

SUBTITLE D - IS A PROGRAM ESTABLISHED FOR CONTROLLING SOLID WASTE (NON-HAZARDOUS) MANGAGEMENT SUCH AS HOUSEHOLD WASTE.

SUBTITLE I - IS A PROGRAM ESTABLISHED BY HSWA TO REGULATE TOXIC SUBSTANCES AND PETROLEUM PRODUCTS STORED IN UNDERGROUND TANKS.

SUBTITLE J - IS THE MOST RECENT PROGRAM ESTABLISHED FOR CONTROLLING MEDICAL WASTE MANAGEMENT AND TRACKING.

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## **SUBTITLE C OF RCRA**

- **In 1979, EPA Estimated that Only 10 Percent of Hazardous Waste was Properly Managed**
- **Subtitle C was Designed for :**
  - **Identifying Hazardous Waste**
  - **Regulating Generators of Hazardous Waste**
  - **Regulating Transporters of Hazardous Waste**
  - **Regulating Owners and Operators of Facilities That Treat, Store, or Dispose of Hazardous Waste**
  - **Issuing Operating Permits to Owners or Operators of Treatment, Storage, and Disposal Facilities**
  - **Enforcing the Subtitle C Program**
  - **Transferring the Responsibilities of the Subtitle C Program from the Federal Government to States**
  - **Requiring Public Participation in the Subtitle C Program**

## DEFINITIONS

- GENERATOR

ANY PERSON WHOSE ACT OR PROCESS PRODUCES HAZARDOUS WASTES.

- TRANSPORTER

A PERSON ENGAGED IN THE OFF-SITE TRANSPORTATION OF HAZARDOUS WASTE BY AIR, RAIL, HIGHWAY, OR WATER.

- : CAN DIRECTLY CROSS PUBLIC ROAD BISECTING FACILITY.
- : CANNOT DRIVE ALONG A PUBLIC ROAD BISECTING FACILITY.

- STORAGE

HOLDING HAZARDOUS WASTES, FOR AT LEAST 90 DAYS, PRIOR TO TREAT OR DISPOSE OF THE WASTE ELSEWHERE.

- TREATMENT

TECHNIQUE OR PROCESS THAT CHANGES THE PHYSICAL, CHEMICAL, OR BIOLOGICAL COMPOSITION OF ANY HAZARDOUS WASTE SO AS TO MAKE IT LESS OR NONHAZARDOUS, SAFER TO TRANSPORT, OR AMENABLE FOR RECOVERY AND STORAGE, OR REDUCED IN VOLUME.

- DISPOSAL FACILITY

A FACILITY OR PART OF A FACILITY AT WHICH HAZARDOUS WASTES IS INTENTIONALLY PLACED INTO OR ON ANY LAND OR WATER, AND AT WHICH WASTE WILL REMAIN AFTER CLOSURE.

## DEFINITIONS

### 0 DISPOSAL

DISCHARGE, DEPOSIT, INJECTION, DUMPING, SPILLING, LEAKING, OR PLACING OF ANY SOLID WASTE OR HAZARDOUS WASTE INTO OR ON ANY LAND OR WATER SO THAT SUCH SOLID WASTE OR HAZARDOUS WASTE OR ANY CONSTITUENT THEREOF MAY ENTER THE ENVIRONMENTAL OR BE EMITTED INTO THE AIR OR DISCHARGED INTO ANY WATERS, INCLUDING GROUND WATERS.

### 0 FACILITY

ALL CONTIGUOUS LAND, AND STRUCTURES, OTHER APPURTENANCES, AND IMPROVEMENTS ON THE LAND, USED FOR TREATING STEERING, OR DISPOSING OF HAZARDOUS WASTE. IT MAY CONSIST OF SEVERAL TREATMENT, STORAGE OR DISPOSAL OPERATIONAL UNITS (E.G. ONE OR MORE LANDFILLS, SURFACE IMPOUNDMENTS, OR COMBINATION OF THEM).

The Subtitle C regulations broadly define the term “generator” to include any:

- Facility owner or operator or person who first creates a hazardous waste, or
- Person who first makes the waste subject to the Subtitle C regulations (e.g., imports a hazardous waste, initiates a shipment of a hazardous waste from a TSDF, or mixes hazardous wastes of different DOT shipping descriptions by placing them into a single container).

## POTENTIAL LIABILITIES AND SANCTIONS UNDER RCRA

RCRA, IN COMMON WITH MANY OTHER ENVIRONMENTAL LAWS, PROVIDES SUBSTANTIAL SANCTIONS IF THE LAW OR ITS REGULATIONS ARE VIOLATED.

- UP TO \$25,000 FINE PER DAY AND/OR 1 YEAR IMPRISONMENT
  - THESE PENALTIES CAN BE DOUBLED ON SECOND VIOLATION
- LOSS OF PERMITS (CONSOLIDATED PERMIT)
- LOSS OF RIGHT TO HANDLE WASTES OR OPERATE WASTE FACILITY
- COMPLIANCE ORDERS
- ENFORCED CLEANUP OF HAZARDOUS SITES

IN ADDITION, OTHER "NON-RCRA" LAWS MAY APPLY.

- FEDERAL FELONIES FOR FRAUD, CONCEALMENT, CONSPIRACY, ETC.
- INJUNCTIONS OR PUBLIC NUISANCE SUITS
- DAMAGE SUITS



Hazardous waste generators regulated under RCRA fall into three categories:

- Large quantity generators
- Small quantity generators
- Conditionally exempt small quantity generators.

Regulations under Subtitle C for large and small quantity generators include:

- Obtaining an EPA ID number
- Preparing hazardous waste for transportation
- Following accumulation and storage requirements
- Manifesting hazardous waste
- Recordkeeping and reporting.

HSWA requires generators to evaluate their waste to determine whether it must be treated prior to land disposal. HSWA requires EPA to establish waste-specific treatment standards in accordance with specified schedules. Depending on whether a treatment standard has been established, recordkeeping requirements for generators differ.

## **Large Quantity Generators**

Early in the development of the RCRA program EPA recognized that hazardous waste regulations impose a substantial burden on the regulated community. Thus, in issuing waste regulations, EPA first focused on those generators that produce the greatest volumes of hazardous waste.

Large quantity generators are defined as those facilities that generate:

- Over 1,000 kilograms per month of hazardous waste, or
- Over 1 kilogram of acutely hazardous waste per month.

Large quantity generators produce the greatest volume of hazardous waste in the United States. EPA's 1985 biennial survey of generators estimated that 274 of the 275 million metric tons of hazardous waste came from large quantity generators.

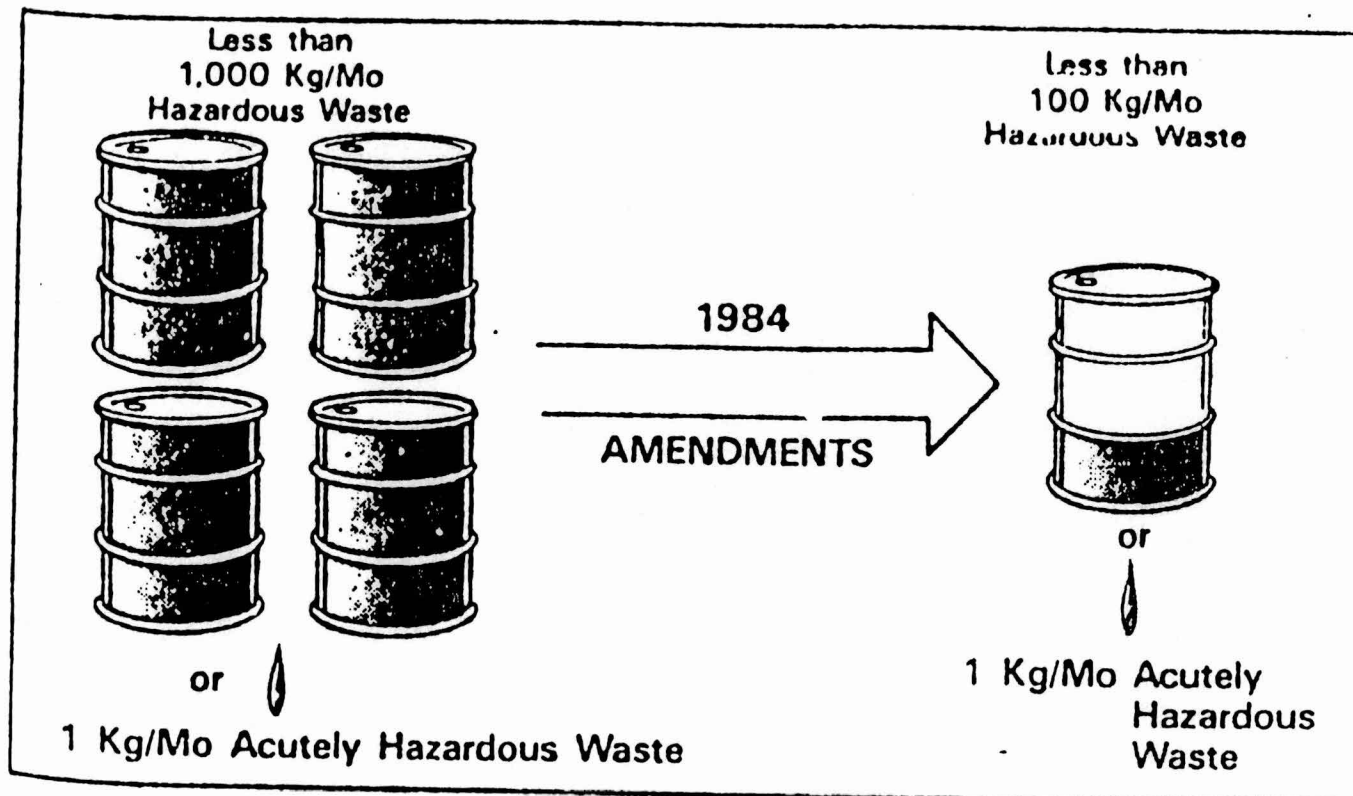
## Small Quantity Generators

The initial EPA regulations, published on May 19, 1980, exempted "small quantity generators" (SQGs) from most of the hazardous waste requirements. (Note: this group of generators is often referred to by the phonetic use of the acronym SQG - "squee-gee"). A small quantity generator was defined as a generator who produced:

- Less than 1,000 kilograms of hazardous waste at a site per month (or accumulated less than 1,000 kilograms at any one time)
- Less than 1 kilogram of acutely hazardous waste per month (or accumulated less than 1 kilogram at any one time).

Because of concern that hazardous waste exempted from regulation due to the SQG exclusion could be causing environmental harm, Congress amended the definition of SQGs in HSWA, reducing the cut-off point from 1,000 kilograms to 100 kilograms. Thus the revised definition of SQG is a generator who produces:

- Greater than 100 but less than 1,000 kilograms of hazardous waste at a site per month (and accumulates less than 6,000 kilograms at any one time)
- Less than 1 kilogram of acutely hazardous waste per month (and accumulates less than 1 kilogram at any one time).



### CHANGES IN SMALL QUANTITY GENERATOR EXEMPTION

## **Conditionally Exempt Small Quantity Generators**

Currently, a facility that generates less than 100 kilograms per month of hazardous waste and less than 1 kg per month of acutely hazardous waste is "conditionally exempt" from full regulation under Subtitle C. The conditionally exempt SQG, however, must still:

- Identify the waste to determine whether it is a hazardous waste
- Not accumulate more than 1,000 kilograms of hazardous waste at any time
- Treat or dispose of the waste on site, or ensure that the waste is sent to a:
  - Permitted or interim status TSDF, or
  - Permitted municipal or industrial solid waste facility, or
  - Recycling facility.

A transporter of hazardous waste must comply with both DOT and EPA regulations. The Subtitle C regulations require a transporter to:

- Obtain an EPA ID number
- Comply with the manifest system
- Handle hazardous waste discharges.

Under certain circumstances, a transporter of hazardous waste also may be subject to Subtitle C generator and/or storage facility requirements.

Varying State hazardous waste transportation programs often add additional requirements beyond the Federal program. Transporters should consult the regulations of States they travel through to fully understand hazardous waste transport requirements.

Treatment, storage, and disposal facilities (TSDFs) are the last link in the "cradle-to-grave" hazardous waste management system. In order to handle hazardous wastes, TSDFs must obtain a permit and abide by TSD regulations.

TSDFs fall into two categories:

- Interim status facilities
- Permitted facilities.

Interim status was developed by Congress to allow certain owners and operators of facilities in existence on November 19, 1980 (or brought under Subtitle C regulation after this date by amendment), to continue operating as if they have a permit until their permit application is issued or denied.

There are two sets of TSD regulations:

- Interim Status Standards - These are "good housekeeping" requirements, (e.g. tanks should be used properly), found in 40 CFR Part 265.
- Permit Standards - These are facility-specific performance standards and "design and operating" requirements incorporated into the permit, (e.g., tanks storing hazardous waste must be designed to specifications) found in 40 CFR Part 264. The standard permit language, found in the regulations, is general and serves as a guideline for permit writers in setting specific design and operating requirements through "best engineering judgment."

Both TSD regulations are composed of:

- Administrative and Non-Technical Requirements - These ensure that owners or operators of TSDFs establish the necessary procedures and plans to run a facility properly and to handle any emergencies or accidents. They cover:
  - Who is subject to the regulations
  - General facility standards
  - Preparedness and prevention
  - Contingency plans and emergency procedures
  - Manifest system, record-keeping and reporting.
- Technical Requirements - These ensure that owners or operators operate TSDFs in a way that minimizes the potential for threats to human health and the environment. Technical requirements are further broken down into:
  - General standards that apply to several types of facilities, covering:
    - Ground-water monitoring
    - Closure/post-closure
    - Financial requirements.



- Specific standards that apply to a waste management method, covering:
  - Containers
  - Tanks
  - Surface impoundments
  - Waste piles
  - Land treatment
  - Landfills
  - Incinerators
  - Thermal treatment (interim status standards only)
  - Chemical, physical, and biological treatment (interim status standards only)
  - Underground injection (interim status standards only)
  - Miscellaneous units

**HSWA Section 3004 requires the Administrator to examine all listed hazardous wastes and some others to determine whether any should be banned from land disposal. Those wastes with concentrations of toxic constituents that threaten human health and the environment must be treated before they can be land disposed.**

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## Exemptions From Obtaining An Operating Permit

- Generator accumulation time
- Small quantity generators
- Transporter break-bulk facilities
- Permits-by-rule     PGTW
- Recycling
- Wastewater treatment units     Tank
- Elementary neutralization units     Tank-2
- Totally enclosed treatment units
- Absorbing container wastes
- Pesticide disposal
- Emergency response

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## **Deadlines Set By The 1984 Amendments By Which Applicants Must Submit Part B Permit Applications:**

- |   |                  |
|---|------------------|
| ■ Land disposal facilities                          | November 8, 1985 |
| ■ Incinerator facilities                            | November 8, 1986 |
| ■ Tank, container storage, and treatment facilities | November 8, 1988 |

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## Loss of Interim Status

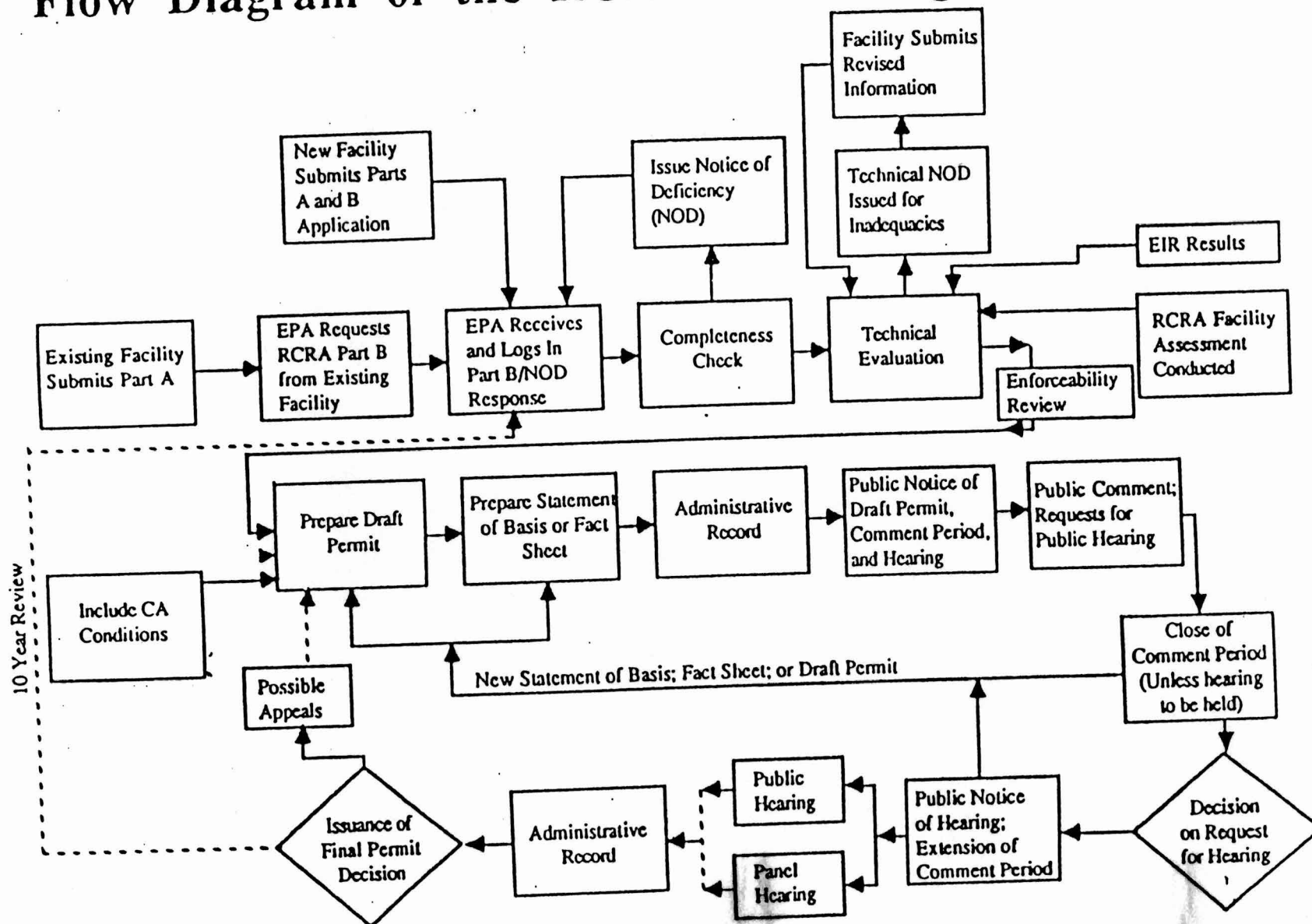
- Interim status is lost when:
  - A permit is issued
  - A Part B permit application is submitted late or incomplete
  - An applicant does not comply with the deadlines set by the 1984 HSWA amendments

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## **Deadlines Set By The 1984 Amendments By Which EPA and Authorized States Must Issue or Deny Final Permits for Interim Status Facilities:**

- |   |                  |
|---|------------------|
| ■ Land disposal facilities                          | November 8, 1988 |
| ■ Incinerator facilities                            | November 8, 1989 |
| ■ Tank, container storage, and treatment facilities | November 8, 1992 |

## Flow Diagram of the RCRA Permitting Process



R C R A - S E C 3 0 0 1

WHAT IS A SOLID WASTE?

ANY MATERIAL

- SOLID
- LIQUID
- SEMI-SOLID
- CONTAINERIZED GAS

THAT HAS BEEN

- DISCARDED
- SERVED ITS INTENDED PURPOSE
- INDUSTRIAL OR MINING BY-PRODUCT

All solid waste generators must determine if their waste is hazardous and, therefore, subject to regulation under Subtitle C. The Subtitle C regulations specify that a solid waste is hazardous if it is not excluded and meets one of four conditions:

1) Exhibits any of four characteristics:

- Ignitability
- Corrosivity
- Reactivity, or
- EP Toxicity.

2) Is listed

3) Is a mixture, or

4) Is derived from the treatment, storage, or disposal of a listed waste.

Through delisting, any person may petition EPA to exclude a listed waste from regulation under Subtitle C.

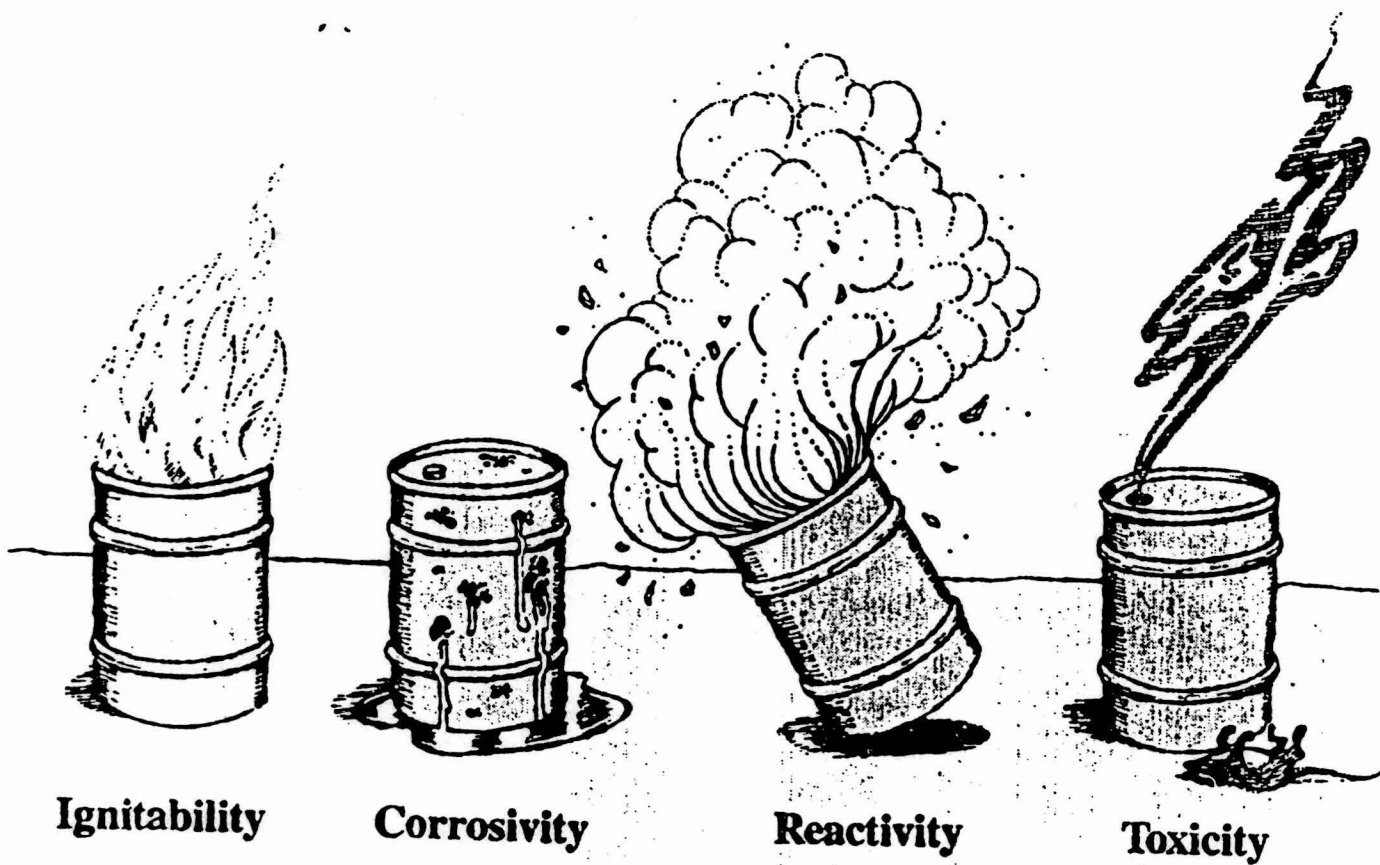
The recycling of hazardous waste may, under certain circumstances, exempt it from Subtitle C regulation.



# R C R A - S E C 3 0 0 1

## SUMMARY OF EPA LISTS AND CHARACTERISTICS

			<u>EPA HAZARDOUS WASTE NUMBER</u>
0	<u>LISTS</u>		
	261.31	NON-SPECIFIC SOURCES	F001-F039
	261.32	SPECIFIC SOURCES	K001-K136
	261.33(E)	ACUTE HAZARDOUS WASTES	P001-P123
	261.33(F)	TOXIC WASTES	U001-U359
0	<u>CHARACTERISTICS</u>		
	261.21	IGNITABILITY	D001
	261.22	CORROSIVITY	D002
	261.23	REACTIVITY	D003
	261.24	EP TOXICITY (BEFORE 9 - 25 - 90)	D004-D017
		TOXICITY CHARACTERISTICS	D004-D043
		LEACHING PROCEDURE (TCLP/AFTER 9-25-90)	



*A waste is hazardous if it exhibits any of these four characteristics.*

R C R A - S E C 3 0 0 1

. CHARACTERISTIC OF IGNITABILITY (D001)

§261.21

FOR LIQUIDS, FLASH POINT LESS THAN 140°F BY

- PENSKY-MARTENS CLOSED-CUP (ASTM D-93-79)
- SETAFLASH CLOSED-CUP (ASTM D-3278-78)

FOR NON-LIQUIDS, "CAPABILITY TO CAUSE FIRE" AND  
"BURN SO VIGOROUSLY AND PERSISTENTLY THAT IT CREATES  
A HAZARD".

FOR COMPRESSED GAS, IT IS "IGNITABLE" AS DEFINED BY  
DOT HAZARDOUS MATERIAL REGULATIONS (49 CFR 173.300).

FOR ANY MATERIAL WHICH IS AN "OXIDIZER" UNDER DOT  
REGULATIONS (49 CFR 173.151).

R C R A - S E C 3 0 0 1

CHARACTERISTIC OF CORROSIVITY (D002)

§261.22

0 FOR AQUEOUS SOLUTIONS

-- PH LESS THAN OR EQUAL TO 2.0

-- PH GREATER THAN OR EQUAL TO 12.5

0 FOR LIQUIDS

-- CORRODES STEEL (SAE 1020)

-- AT RATES GREATER THAN 0.250 INCH PER YEAR, AT A  
TEST TEMPERATURE OF 130°F.

-- NATIONAL ASSOCIATION OF CORROSION ENGINEERS  
STANDARD TM-01-69

RCRA - SEC 3001  
CHARACTERISTIC OF REACTIVITY (D003)

261.23

0 ANY OF THE FOLLOWING PROPERTIES CAUSES FAILURE OF THE  
REACTIVITY TEST:

- NORMALLY UNSTABLE AND READILY UNDERGOES VIOLENT CHANGE.
- REACTS VIOLENTLY WITH WATER.
- FORMS POTENTIALLY EXPLOSIVE MIXTURES WITH WATER.
- WHEN MIXED WITH WATER, GENERATES TOXIC GASES, VAPORS, OR  
FUMES IN DANGEROUS QUANTITIES.
- CAPABLE OF DETONATION OR EXPLOSIVE REACTION UNDER HEAT OR  
STANDARD CONDITIONS.
- EXPLOSIVE MATERIAL ACCORDING TO DOT REGULATIONS:
  - 49 CFR 173.51 - FORBIDDEN EXPLOSIVE
  - 49 CFR 173.53 - CLASS A EXPLOSIVE
  - 49 CFR 173.88 - CLASS B EXPLOSIVE
- EXHIBIT ONE OF THE FOLLOWING CONCENTRATION FOR:
  - CYANIDE - 250 PPM
  - SULFIDE - 500 PPM

# R C R A - S E C 3 0 0 1

## CHARACTERISTIC OF EXTRACTION PROCEDURE (EP) TOXICITY

§261.24

### o EP TOXICITY

-- EXTRACT CANNOT EXCEED 100 TIMES DRINKING WATER STANDARDS.

		MAX. EXTRACT CONCENTRATION
		<u>PPM</u>
D004	ARSENIC	5.0
D005	BARIUM	100.0
D006	CADMIUM	1.0
D007	CHROMIUM	5.0
D008	LEAD	5.0
D009	MERCURY	0.2
D010	SELENIUM	1.0
D011	SILVER	5.0
D012	ENDRIN	0.02
D013	LINDANE	0.4
D014	METHOXYCHLOR	10.0
D015	TOXAPHENE	0.5
D016	2, 4 D	10.0
D017	2, 4, 5 - TP SILVEX	1.0

## **FACTS AND FIGURES**

### **ON THE TOXICITY CHARACTERISTIC (TC) RULE**

**What the Rule Does:** Adds 25 chemicals to the eight metals and six pesticides on the existing list of constituents regulated under RCRA. The rule also establishes regulatory levels for the new organic chemicals listed, and replaces the Extraction Procedures leach test with the Toxicity Characteristic Leaching Procedure.

**When It Takes Effect:** Generators must comply with this regulation within six months of the date of notice in the *Federal Register*; small quantity generators must comply within one year.

**Who It Affects:** The rule will bring waste above regulatory levels into the system primarily from the following industries:

#### **Major Industrial Sectors Analyzed For the Regulatory Impact Analysis**

Organic Chemicals  
Petroleum Refining  
Pharmaceuticals  
Pipelines, except Natural Gas  
Plastics Materials and Resins  
Pulp and Paper  
Rubber and Miscellaneous Plastics Products  
Synthetic Fibers  
Synthetic Rubber  
Textile Mills  
Wholesale Petroleum Marketing

#### **Potentially Affected Industries:**

Generators: 15,000-17,000

New Treatment, Storage, and Disposal Facilities (TSDFs): 200-400, in addition to the existing 5,000 TSDFs.

**Estimated Economic Savings:** Approximately \$3.8 billion in damage to ground water resources avoided.

**Estimated Quantity of Waste Affected:** Some 1.8 million metric tons per year of nonwastewaters, which account for most of the cost, may be subject to the rule. Additionally, 700 million metric tons of wastewater may also be affected.

# TOXICITY CHARACTERISTIC CONTAMINANTS AND REGULATORY LEVELS

US EPA Hazardous Waste Number	Constituent	Regulatory Level - in mg/l (ppm)	Reportable Quantity 40 CFR Part 302 (in lbs)
D004	Arsenic	5.0	1
D005	Barium	100.0	1,000
D018	Benzene	0.5	10
D006	Cadmium	1.0	10
D019	Carbon Tetrachloride	0.5	10
D020	Chlordane	0.03	1
D021	Chlorobenzene	100.0	100
D022	Chloroform	6.0	10
D007	Chromium	5.0	10
D023	o-Cresol	200.0 *	1,000
D024	m-Cresol	200.0 *	1,000
D025	p-Cresol	200.0 *	1,000
D026	Cresol	200.0 *	1,000
D016	2,4-D	10.0	100
D027	1,4-Dichlorobenzene	7.5	100
D028	1,2-Dichloroethane	0.5	100
D029	1,1-Dichloroethylene	0.7	100
D030	2,4-Dinitrotoluene	0.13	10
D012	Endrin	0.02	1
D031	Heptachlor, and its Hydroxide	0.008	1
D032	Hexachlorobenzene	0.13	10
D033	Hexachloro-1,3-butadiene	0.5	1
D034	Hexachloroethane	3.0	100
D008	Lead	5.0	1
D013	Lindane	0.4	1
D009	Mercury	0.2	1
D014	Methoxychlor	10.0	1
D035	Methyl Ethyl Ketone (MEK)	200.0	5,000
D036	Nitrobenzene	2.0	1,000
D037	Pentachlorophenol	100.0	10
D038	Pyridine	5.0	1,000
D010	Selenium	1.0	10
D011	Silver	5.0	1
D039	Tetrachloroethylene	0.7	100
D015	Toxaphene	0.5	1
D040	Trichloroethylene	0.5	100
D041	2,4,5-Trichlorophenol	400.0	10
D042	2,4,6-Trichlorophenol	2.0	10
D017	2,4,5-TP Silvex	1.0	100
D043	Vinyl Chloride	0.2	1



## FINAL RULE ON PRIMARY SLUDGE LISTING

### EFFECTIVE DATE

The Primary Sludge rule is effective on May 2, 1991. As of the effective date, most wastewater sludges and floats generated upstream of advanced biological treatment are listed wastes. Exemptions established in the TC rule (eg. wastewater treatment unit, unit cease receiving flow prior to May 3, 1991, one time waste removal etc.) also apply to the primary sludge rule. Please note additional exemptions listed under description of F037 and F038 wastes.

### THE F037 AND F038 WASTES

F037 listed sludge is defined as petroleum refinery primary oil/water/solids separation sludge - Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oil cooling wastewaters from petroleum refineries. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated in aggressive biological treatment units, sludges generated in units receiving effluent from the aggressive biological unit and K051 wastes are not included in the listing.

F038 listed sludge is defined as petroleum refinery secondary emulsified oil/water/solids separation sludge - Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oil cooling waters from petroleum refineries. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated in aggressive biological treatment units, sludges generated in units receiving effluent from the aggressive biological unit and F037, K048 and K051 wastes are not included in the listing.

Please note that aggressive biological treatment is defined in §261.31(b)(2)(i) as employing one of the following four treatment methods: activated sludge, trickling filter, rotating biological contactor, or high-rate aeration (mixing rate of at least 6 hp per million gallons of treatment volume).

*While F038 sludges generated in units that do not receive dry weather flow are exempted from listing, floats are implied but not mentioned as being exempt. Sun's position is that we believe that EPA intended to exempt floats. API may pursue a clarification from EPA. A consensus was reached that API separator skim is oil, not secondary separation (like DAF float) and hence would not be a F038 waste.*

### GENERATION

F037 and F038 sludges are considered by EPA to be generated at the moment of disposition in the unit due to temporary cessation of lateral particle movement. F038 floats are considered generated the moment they are formed in the top of the unit. Generators and TSD facilities have the burden of proving that their sludges are not included in the listing as F037 and F038 wastes. Generators and TSD facilities also must maintain onsite records, documents and data that prove the sludge generated is not a F037 or F038 and/or why the unit that generates the sludge is exempt from permitting requirements in 40 CFR 264 and 265.

### DRY WEATHER FLOW EXEMPTION

*A general consensus was reached that WET WEATHER flow includes process and rain water to a pit. The trickle from the storm pit back into the wastewater treatment system is exempt as considered part of wet weather flow. Sludge deposited and removed would not be regulated. DRY WEATHER flow would be process waters to a storm pit with no concurrent rain water. Hence sludges generated are listed. The problem tabled concerns the issue that when rain stops, normal operations may demand that flow continue to the storm pit for a short time period, and a uninformed person can view that a dry weather flow. However, Sun's position is that if we can document that flow into an impoundment was because of a rain event, then the exemption applies.*

### TANK ISSUES

Tanks and Tank systems that meet the definition of the wastewater treatment unit in 40 CFR 260.10 are not subject to the permitting and interim status requirements of 40 CFR 264 and 265. However, listed sludges, once removed from the excluded wastewater treatment units are subject to all applicable Subtitle C regulations. In addition, generator storage standards (ie, less than 90 days) apply only to persons who accumulate hazardous waste in container storage units or tanks systems. If the wastes are managed or generated in surface impoundments or units that are not tanks or containers, then these units are subject to the permitting requirements of 40 CFR 264 and 265.

### SURFACE IMPOUNDMENTS

Surface Impoundments that generate F037 or F038 wastes must comply with minimum technology requirements (MTR) by May 2, 1994 or cease receiving hazardous waste as of May 2, 1991. Prior to May 2, 1991 any newly listed sludges currently generated may be disposed of without compliance with Subtitle C regulations (as long as no characteristic is exhibited).

*Some issues put on the table; 1) It appears that EPA may not grant a full 4 years to achieve compliance with MTR for either TC or primary sludge as land disposal in non-MTR units would be prohibited once landban standards are promulgated. EPA has acknowledged this inconsistency in the statute, but has not said when it will be resolved. 2) EPA and some states have issued guidance suggesting that "In-Situ" treatment does not trigger landban. But that removal and replacement into the same unit does trigger landban. 3) A suggestion was tabled that solidification of a unit to support a cap would probably not be viewed by EPA as treatment and hence, not active management.*

### FOR INTERIM STATUS FACILITIES

Facilities that currently have interim status must file an amended Part A no later than May 2, 1991. Land disposal facilities must submit a revised Part B permit and certify compliance with all 40 CFR 264 monitoring and financial responsibility requirements by May 2, 1992.

## LANDBAN ISSUE

EPA has yet to complete the needed treatability and capacity analyses for the newly listed F037 and F038 wastes. Hence, until such analyses is completed, F037 and F038 wastes are not subject to land ban disposal restrictions, unless they exhibit one or more of the characteristics of hazardous waste. The characteristics that are applicable include; ignitability, corrosivity, reactivity and the "former" EP toxic. As treatability and capacity analyses have yet to be promulgated for the "new" TC, wastes exhibiting this characteristic are not yet landbanned. After May 2, 1991, and until the land disposal restrictions are promulgated, F037 and F038 listed sludges can still be disposed of in permitted landfills that do not meet MTR.

## MIXTURE ISSUE

The mixture rule provides that any mixture of a listed waste and a solid waste is itself a RCRA hazardous waste, with certain limited exceptions. In the final rule, EPA declares wastewater flowing downstream from wastewater units generating F037, F038, K048 and K051 sludges will not be hazardous by virtue of the mixture rule, unless some activity, such as scouring, causes the settled listed sludge to be reintroduced back into the wastewater. EPA also declares that a non-actively managed wastewater unit that encounters any type of influent that causes the sludge to be scoured from the unit would trigger the mixture rule. Any subsequent surface impoundment receiving the aforementioned mixture would be managing a hazardous waste and hence subject to 40 CFR 264 and 265.

*Several concerns were placed on the table; 1) How is groundwater, that may be contaminated from primary sludge, viewed when generated from product recovery operations? 2) Will groundwater that is piped directly to biological treatment for remedial purposes result in the bio-sludge being a listed waste and thus conflict with the biological treatment exclusion. Sun would argue that the exemption is not lost. 3) Questions were raised that from the mixture rule, would not effluent from emulsifying wastewater units cause all subsequent units (ie, biological treatment) to be considered hazardous waste management units?*

*A possible solution to the mixture rule problems may be to seek an exemption for groundwater.*

## "DERIVED FROM" ISSUE

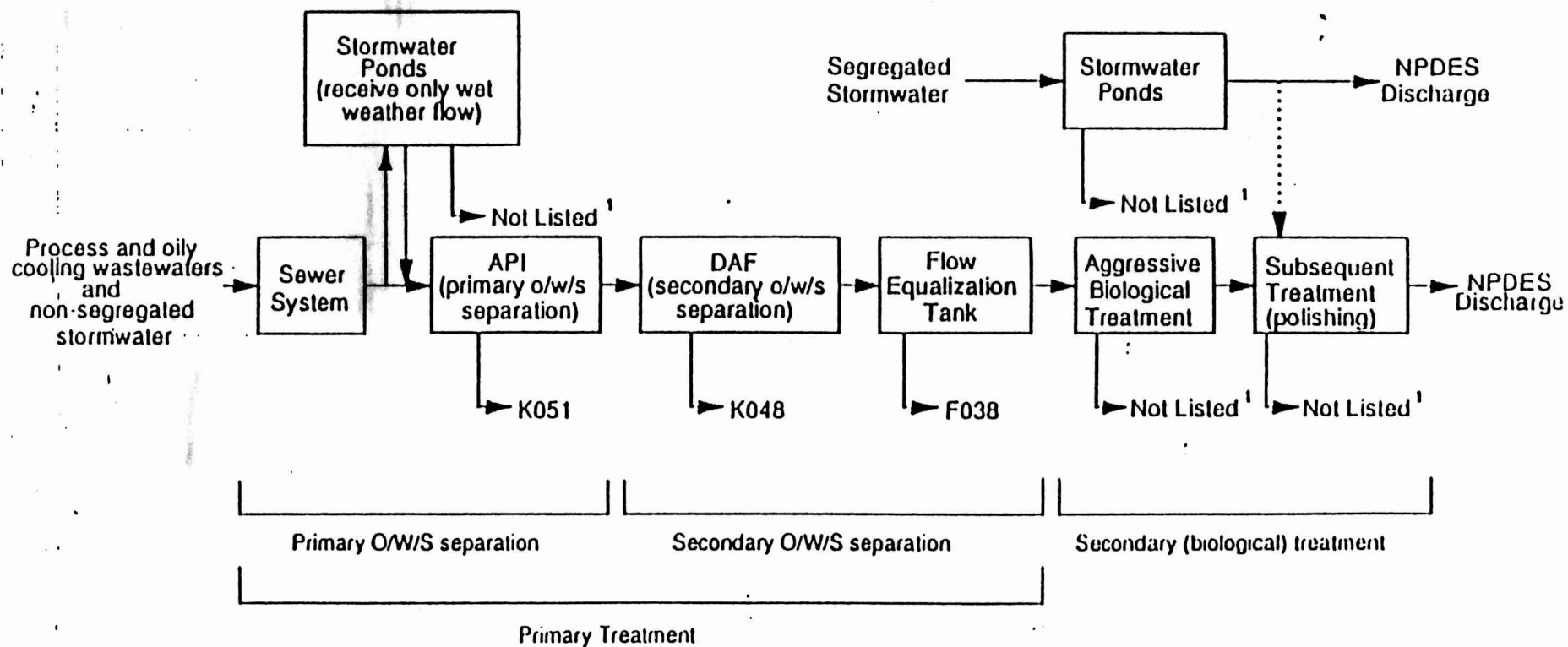
The derived from rule states that any waste derived from the treatment, storage, or disposal of a listed hazardous waste is itself a hazardous waste. Often water from the dewatering of wastewater treatment sludges is recycled to the process operation or returned to the treatment system. In the final rule, EPA declares that such a wastewater is not a "derived from" hazardous waste if it can be demonstrate that the water removed from the sludge is no more contaminated than the original influent to the wastewater treatment unit from which the sludge was removed for dewatering. (analogous to the Skinner Guidance).

## SOLID WASTE MANAGEMENT UNIT ISSUE (SWMU)

All SWMU's that are located at facilities subject to interim status (40 CFR 265) or permitting (40 CFR 264) are subject to RCRA corrective action requirements for releases of hazardous waste or constituents to the environment. The wastewater treatment units that would be managing the newly listed waste would be considered hazardous waste management units and hence, also SWMU's. In the final rule, EPA also declares wastewater treatment units that are exempt from the permitting standards of 40 CFR 264 and 265 are also considered SWMU's subject to corrective action provisions.

It should also be noted that in the final rule, EPA declares that any inactive surface impoundments, or other units, that are located at facilities otherwise subject to 40 CFR 264 or 265 are still considered to be SWMU's and subject to corrective action. EPA also concludes that if a surface impoundment stops receiving flow before May 2, 1991 it still may be considered a SWMU and subject to corrective action but exempt from 40 CFR 264 and 265 permitting requirements.

## MINIMALLY IMPACTED REFINERY WASTEWATER TREATMENT SYSTEM



<sup>1</sup> Specifically excluded from the listing definitions of F037 and F038.

a high suction pump or a vacuum truck and transferred into an exempt wastewater treatment dewatering unit. The dewatered sludge is either stored for off-site treatment or future on-site treatment in a thermal desorber unit. After dewatering or after on-site thermal desorption, the sludge is placed in a secure container and temporarily stored within the HWSA prior to shipment for off-site treatment or disposal.

- The pump, vacuum truck, and/or any other equipment involved in the handling process, is decontaminated as follows:
  - Equipment is moved to the WWTa 2-Cell API Separator cement pad area. It is triple rinsed and the rinsate is discharged into the separator.

### 3.2.1 Current Container Management Practices

Presently, all K051 API separator sludge and F037/F038 primary sludge is stored in the HWSA, which includes the current hazardous waste storage building and the lined unroofed area behind the building. The lined backyard area consists of a 100 mil High Density Polyethylene (HDPE) liner which is bermed to minimize entry of run-off from the other portions of the unroofed unlined backyard area. Hazardous waste is stored in suitable containers and the containers are placed on wooden pallets, or are otherwise elevated above the liner level. Typically, when about 2/3 of the storage capacity is in use or as soon as practicable, SCYI arranges for transportation and disposal off-site as described in Section 3.2.2.

### **Section 3.0 Process Information**

The following sections provide information pertaining to process operations at the SCYI Yabucoa, Puerto Rico Facility.

#### **3.1 Description of Hazardous Wastes**

The following sections provide a description of hazardous wastes handled at the SCYI Yabucoa, Puerto Rico Facility.

##### **3.1.1 Hazardous Wastes from Non-Specific Sources**

- Petroleum Refinery Primary and Secondary Oil-Water-Solids Separation Sludge (F037/F038). This waste is generated from tanks and other units where primary and secondary oil-water-solids separation occurs. It is only sporadically generated when maintenance work is performed in these units.

##### **3.1.2 Hazardous Wastes from Specific Sources**

- Dissolved Air Flotation (DAF) Unit Float (K048). The DAF unit is one of the WWTa primary and intermediate treatment units. The main purpose of this unit is to remove oil that may be suspended in wastewaters prior to biological treatment. The float is conveyed by a closed process pipe system to the WWTa Slop Oil Tanks (TK-005-W5 and W6).



- Slop Oil Emulsion Solids (K049). The SCYI has three Slop Oil Tanks, one located in the Utilities Area (TK-004-103) and two in the WWTa (TK-005-W5 and W6). The water inside the tanks is drained to the 2-Cell API Separator located in the WWTa. The recovered oil is processed in the Crude Unit. Solids (K049) drained along with the water will settle in the API Separator, and become API Separator sludge (K051). TK-004-103 is taken out of service once a year, and TK-005-W5 and W6 every 6 months for cleaning, inspection, and repairs.
- Heat Exchanger Bundle Solids (K050). K050 is generated when the bundles are cleaned. Water and solids are discharged through pipeline to the sewer system, which leads to the WWTa 2-Cell API Separator.  
  
The suspended solids settle in the API Separator, and become API Separator sludge (K051).
- API Separators Sludge (K051). Wastewaters go to the 2-Cell and 3-Cell API Separators through different sewer systems. Oil recovered from the API Separators goes to the Slop Oil Tanks and is subsequently processed in the Crude Unit. The solids settle as

sludge in the separators and the K051 is generated when the sludge is removed.

### 3.1.3 Commercial Chemical Product Hazardous Wastes

- Methanol (U-154). Methanol is used at the SCYI laboratory facilities. Methanol is stored in a specially designated area for laboratory chemical supplies within the facility warehouse. It may be stored as a purchased and unused or defective commercial chemical product due to long-term storage, not as a spent material. As such, in the event that its useful life has expired and if it cannot be returned to the manufacturer, it is necessary to dispose of it as a waste. In such an event, unusable methanol is immediately transported off site for disposal in accordance with RCRA requirements, or may be temporarily stored within the section of the HWSA which will be designated for containerized liquid wastes.

### 3.1.4 Characteristic Waste

- Ignitable Waste (D001). Some spent catalyst exhibits pyrophoric characteristics. This is a solid material coming from the reforming, hydrocracking and other units that use catalysts in their process. Not all catalysts exhibit this characteristic. They are classified



according to the MSDS information and process knowledge. Also in this category are tank bottoms waste (non-leaded) exhibiting a flashpoint below 140°F.

#### 3.1.5 Other Wastes

- Asbestos. Under Puerto Rico law, asbestos waste is a regulated waste. It is generated whenever old insulation is replaced by asbestos-free insulation. Asbestos is not stored in the HWSA. When it is removed from an area, asbestos is put in 6-mil polyethylene bags, which are stored in a closed container that also has a 6-mil polyethylene liner. When the container is full, it is transported off-site for disposal.
- Polychlorinated Biphenyls. Puerto Rico regulations classify polychlorinated biphenyls as hazardous waste. In July 1988, SCYI hired a company to treat electrical equipment at the Yabucoa facility that contained polychlorinated biphenyl (PCB). The hired company had a closed chemical treatment system which, with the electrical equipment in service, removed the PCBs from the dielectric fluid within the equipment. All of the electrical equipment at the Yabucoa facility that had contained PCBs was

treated, and sampled. Sample results verified that the electrical equipment no longer contains PCBs.

- Process Area Chemicals. The SCYI uses different chemical materials in its process areas which, if spilled or disposed of, meet the definition of hazardous waste as per 40 CFR 261. In the event of a spill or if materials are contaminated or off-specification, there may be a need to dispose of them if they are not returned to the manufacturer. In such an event, the materials are handled as hazardous and disposed of immediately, in accordance with RCRA requirements. If temporary storage (less than 90 days) is necessary, they will be placed in the appropriate storage area of the HWSA.

- Toxicity Characteristic (TC) Waste.  
Wastewater containing benzene (D018) generated from process areas is discharged to the wastewater treatment plant of the facility. Since the SCYI wastewater treatment unit meets the definition specified at 40 CFR 264.10, the standards which define the acceptable management of hazardous waste, as specified at 40 CFR 264, do not apply, per 264.1(g)(6), 265.1(c)(10), and 270.1(c)(2)(v). The SCYI wastewater treatment unit discharges via an NPDES

outfall which is regulated under section 402 of the Clean Water Act. Thus, discharge via this outfall are not solid wastes pursuant to 40 CFR 261.4(a)(2). Tank bottom sludges generated from tank cleaning may also contain benzene (D018). These sludges are sampled for TCLP before treatment and/or disposal. To date none of the sludges generated from tank bottom cleaning has been hazardous based on TCLP.

- Other Non-Listed Solid Wastes. When generated, these wastes will be analyzed for the RCRA characteristic parameters of corrosivity, reactivity, ignitability and toxicity characteristic (TC). If sample analytical results indicate that these wastes are hazardous, they will be handled as such in compliance with RCRA requirements.

### **3.2 Waste Handling Practices**

Most of the hazardous waste generated at the refinery is sludge from the API Separators (K051). K051 is generated when the separator cells are cleaned. The handling procedure is as follows:

- The separator cell to be cleaned is taken out of service and all wastewater inside the cell is processed in the WWTa (in the future, SCYI may install sludge handling facilities to remove the sludge without the necessity of taking the separator out of service). The sludge is then removed using

### 3.2.2 Proposed Container Management Practices

|| An approximately four (4) inch thick asphalt pad covering the surface of the existing building backyard area forms the floor of the unroofed portion of the HWSA. The SCYI is proposing to upgrade and expand the unroofed portion of the HWSA. In addition to maintaining the existing building, the SCYI is proposing to upgrade the HWSA by replacing and expanding the existing asphalt pad with a lined, concrete pad. This upgraded HWSA will also be further enhanced by the addition of a roof. The upgrade will include an appropriately designed area to accommodate storage of containerized liquid hazardous waste. All hazardous waste will be stored in suitable containers, such as 55-gallon drums, bags, roll-off dumpsters, and managed as described below.

- Liquid hazardous wastes will be stored in a proposed partitioned section of the HWSA. This section will be built on top of the new lined concrete pad and will be separated from the non-liquid section of the HWSA by an elevated concrete floor and partitions. The concrete floor will be sufficiently impervious to contain leaks, spills, and accumulated precipitation until the accumulated material is properly removed. The concrete floor will be sloped to drain any spillage into a concrete gutter which will drain to a blind sump. The combined capacity of the gutter and blind sump are designed to contain at least 10% of the maximum anticipated liquid storage capacity. Within the section partitioned for

liquid storage, containers will be stored on pallets and, thus, elevated above floor level.

- The non-liquid hazardous waste storage of the HWSA will be separated from the liquid waste section of the HWSA, as explained above. The non-liquid hazardous waste storage section consists of the existing building and the concrete pad area within the fenced backyard perimeter of the HWSA, except that section designated specifically for liquid hazardous waste storage. All hazardous wastes within the non-liquid storage section will be secured within acceptable containers (55-gallon drums, bags, roll-off dumpsters) and placed on wooden pallets or otherwise elevated above floor level. The proposed Hazwaste container arrangement is provided on Figures 3-1.

The following handling and transportation procedures are currently being utilized at the SCYI, and will continue to be utilized in the same manner after modification to the HWSA is complete.

- All containers are labeled with an appropriate hazardous waste label that identifies the USEPA hazardous waste identification number and the date when it was initially stored in a container. Any disposable protective equipment used by the workers is placed into a suitable container and properly disposed.

- At appropriate times, the contracted transportation company is contacted.
- The containers are removed from the HWSA using a fork lift or other suitable means and loaded into appropriate transportation equipment. The transportation company, generally Héctor L. García Trucking (USEPA Identification Number PRD982183279), delivers the closed containers to the San Juan Dock.
- At the San Juan Dock, the closed containers are loaded onto a vessel owned by either TMT (USEPA Identification Number PRD090559360) or Navieras de P.R. (USEPA Identification Number PRD000726810). The vessel delivers the closed containers to the destination port, such as Pennsauken, N.J.; or to a TMT facility located at Lake Charles, Louisiana or Port Arthur, Texas Dock.
- At the destination port, the closed containers are picked up by one of several trucking companies, such as Laidlaw Environmental Company (USEPA Identification Number TXD0988023305), Port Serve Trucking (USEPA Identification Number LAD981609530). These trucking companies deliver the closed containers to the specified treatment/disposal location (e.g. Chemical Waste Management Landfill located in Carlyss, Louisiana (USEPA Identification Number LAD000777201), Texas Ecologist disposal facility (USEPA Identification Number TXD069452340)

- located in Robstown, Texas, Republic Environmental Recycling, Inc. (USEPA Identification Number NJD981133150) located in Clayton, New Jersey, Chemical Waste Management Incinerator (USEPA Identification Number TXD00838896) in Port Arthur, Texas), or any other specified approved hazardous waste treatment, storage or disposal facility. At the Texas Ecologist facility, as well as the Chemical Waste Management facility, the wastes are disposed in a RCRA-approved secure landfill.
- The transportation and disposal process is documented using a hazardous waste manifest. The completed manifests are submitted to the EQB twice per every shipment; the first time when the hazardous waste is originally shipped and the second when the signed manifests are received from the treatment, and/or disposal facility. The hazardous waste is tracked until the transportation and disposal process has been completed in the manner described and the manifest completed. Any exception is reported to both the USEPA and the EQB.

Primary Sludge Wastes (F037/F038) are generated when the sewer system, the Dissolved Air Flotation (DAF) unit or the Slop Oil Tanks (TK-004-103 and TK-005-W5 and W-6) are cleaned for inspections and repairs. The waste handling process is as follows:

- The water inside the Slop Oil Tanks is drained to the WWTa 2-Cell API Separator, and in the case of the DAF unit the water is routed through the

normal WWTa process. The sludge inside the units is removed using a vacuum truck. From here on, the waste follows the same handling and disposal procedure as described for the API Separators Sludge.

As mentioned in Section 3.1.2, K049 and K050 wastes, during their handling, end up as API Separator Sludge (K051), where these are handled and disposed of as such.

Non-hazardous solid wastes are stored within a designated storage building area located approximately 200 ft. in front of the HWSA. Non-hazardous waste may also be stored in various containers (e.g., wooden boxes, drums, and bags) in a designated open area within the HWSA. The hazardous and non-hazardous wastes are adequately segregated. The proposed final arrangement of the HWSA is shown on Figure J-1.

### **3.3 Land Disposal Restricted Wastes**

The K048, K049, K050, K051, F037, and F038, D001, D018, and methanol hazardous waste generated at the facility are subject to Land Ban Disposal restrictions. The handling, storage, and disposal process for these wastes is discussed in Section 3.2.

The accumulation time for these wastes will not exceed a time interval of 1 year, as specified in 40 CFR 268.50(c). This time frame will be ensured through the HWSA inspection procedure. All land disposal restricted wastes generated at the SCYI refinery will be transported to an acceptable off-site RCRA-approved treatment facility.



### **3.4 Unit Description**

The existing hazardous waste unit in operation at the SCYI is the HWSA. A description of the HWSA as it presently exists is provided in Section 3.4.1. Proposed modifications to the existing HWSA are provided in Section 3.4.2.

#### **3.4.1 Existing HWSA**

Presently, the HWSA includes the current hazardous waste storage building and the lined unroofed area behind the building (see Figure 3-2). The lined area consists of a 100 mil High Density Polyethylene (HDPE) liner which is bermed to minimize entry of run-off from the other areas of the unroofed HWSA. The sludge materials are stored in suitable containers and the containers are placed on wooden pallets, or are otherwise elevated above the liner level. An asphalt pad approximately four (4) inches thick covers the backyard surface behind the existing building and forms the floor of the unroofed area of the HWSA. The SCYI is proposing to upgrade the HWSA.

#### **3.4.2 Proposed HWSA**

In addition to maintaining the existing building, the SCYI is proposing to upgrade the backyard area by replacing the existing lined asphalt pad with a lined, concrete pad. The proposed concrete pad will be at least six (6) inches thick and impervious. This upgraded storage backyard area will also be further enhanced by the addition of a roof. The upgrade will also include an appropriately designed area to accommodate storage of containerized liquid hazardous waste. All hazardous waste will be stored in suitable containers such as 55-

gallon drums, bags, roll-off dumpsters, etc. An eight (8) foot high chain link fence encircles the entire HWSA. The configuration of the proposed HWSA is depicted on Figure 3-3.

#### 3.4.3 Proposed HWSA - Liquid Storage Area (LSA)

Liquid hazardous wastes will be stored in a proposed partitioned section of the HWSA and will cover an area of about 1,326 ft<sup>2</sup> (see Figures 3-1, 3-3 and J-1B). This section will be built as part of the new lined concrete pad and will be separated from the non-liquid section of the HWSA by an elevated concrete floor and partitions. The concrete floor will be sufficiently impervious to contain leaks, spills, and accumulated precipitation until the accumulated material is properly removed. The concrete floor will be sloped to drain any spillage into a concrete gutter which will drain to a blind sump. The combined capacity of the gutter and blind sump are designed to contain at least 10% of the maximum anticipated liquid storage volume. The maximum storage volume of the LSA will be 17,600 gallons. A four (4) inch high curb will be located atop the elevated concrete pad and will enclose the perimeter of the LSA. The LSA and Non-Liquid Storage Area (NLSA) will be covered by a common roof and will be underlain by the same impervious liner, which will be no less than 40-mil in thickness. Within the section designated for liquid storage, containers will be stored on pallets and, thus, elevated above floor level.

#### 3.4.4 Proposed HWSA - Non-Liquid Storage Area (NLSA)

The non-liquid hazardous waste storage area (i.e. building and concrete pad) of the HWSA will be separated from the liquid waste section of the HWSA, as explained above.

The non-liquid hazardous waste storage section will represent the existing building and the concrete pad area, within the fenced backyard perimeter of the HWSA, except that section designated specifically for liquid hazardous waste storage. The NLSA will cover an area of about 8,174 ft<sup>2</sup>. All hazardous wastes within the non-liquid storage section will be secured within acceptable containers (55-gallon drums, bags, roll-off dumpsters, etc.) and placed on wooden pallets or otherwise elevated above floor level (see Figure 3-1, 3-3, and J-1A). The maximum storage volume of the proposed HWSA will be 630 cubic yards of non-liquid hazardous waste and about 17,600 gallons (87 c.y.) of liquid-hazardous waste.

#### 3.4.5 Integrity of Containment System

The engineering evaluation and certification of the existing concrete pad within the existing HWSA building is included in Appendix P. Additionally, since liquid hazardous waste will be temporarily stored in containers within the appropriate area of the proposed HWSA, a HDPE liner (no less than 40-mil thickness) will be located beneath the concrete pad to properly contain any spillage and to assure the impervious integrity of the entire HWSA, per 40 CFR 264 (b)(1). An engineering evaluation and certification of the proposed concrete pad will be performed as soon as construction is completed.

#### 3.4.6 Removal of Liquid from Containment System

Liquid hazardous wastes and/or sludge with free liquids may be temporarily stored in containers inside the proposed HWSA/liquid storage area. The concrete pad that will form the base of the liquid storage area will be sloped so as to direct liquids from spillage or

incidental rainfall into a grated gutter. This gutter will drain to a grated blind sump. The gutter and sump are designed to contain a liquid volume equivalent to at least 10% of the liquid storage area maximum storage capacity. Any spillage will be cleaned-up with sorbent material or removed with vacuum equipment. Sorbent material, used personal protective equipment, rinsate and recovered liquid hazardous waste will be placed into suitable containers and temporarily stored within the appropriate HWSA sector. The impacted area(s) of the concrete pad will be scrubbed and triple rinsed so as to remove all vestiges of hazardous liquid waste. Incidental rainwater may fall within both the liquid and non-liquid storage areas of the HWSA due to wind action. This water will either evaporate or, when an unusual rain event occurs, will gravity-drain through the sump to the WWSA non-liquid hazardous waste storage area, or will accumulate in the blind sump (liquid hazardous waste storage area). Since all containers are located on wooden pallets or otherwise elevated, the rain water will not come in contact with either the containers or the stored material.

#### 3.4.7 Test For Free Liquids

When necessary, material of questionable free liquid content will be tested via the Paint Filter Liquids Test, SW 846 Method 9095. Material collection methods and procedures will be consistent with those described in the applicable section(s) of SW846.

# EXPLANATION

1. 3 CELL API SEPARATOR
2. 2 CELL API SEPARATOR
3. AIR FLOTATION UNIT
4. WEST API SEPARATOR
5. EAST API SEPARATOR
6. EQUALIZATION TANKS
7. SLOP OIL TANKS W5 & W6
8. SLOP OIL TANK 103

HAZARDOUS WASTE STORAGE AREA

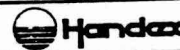
DOCK FACILITIES

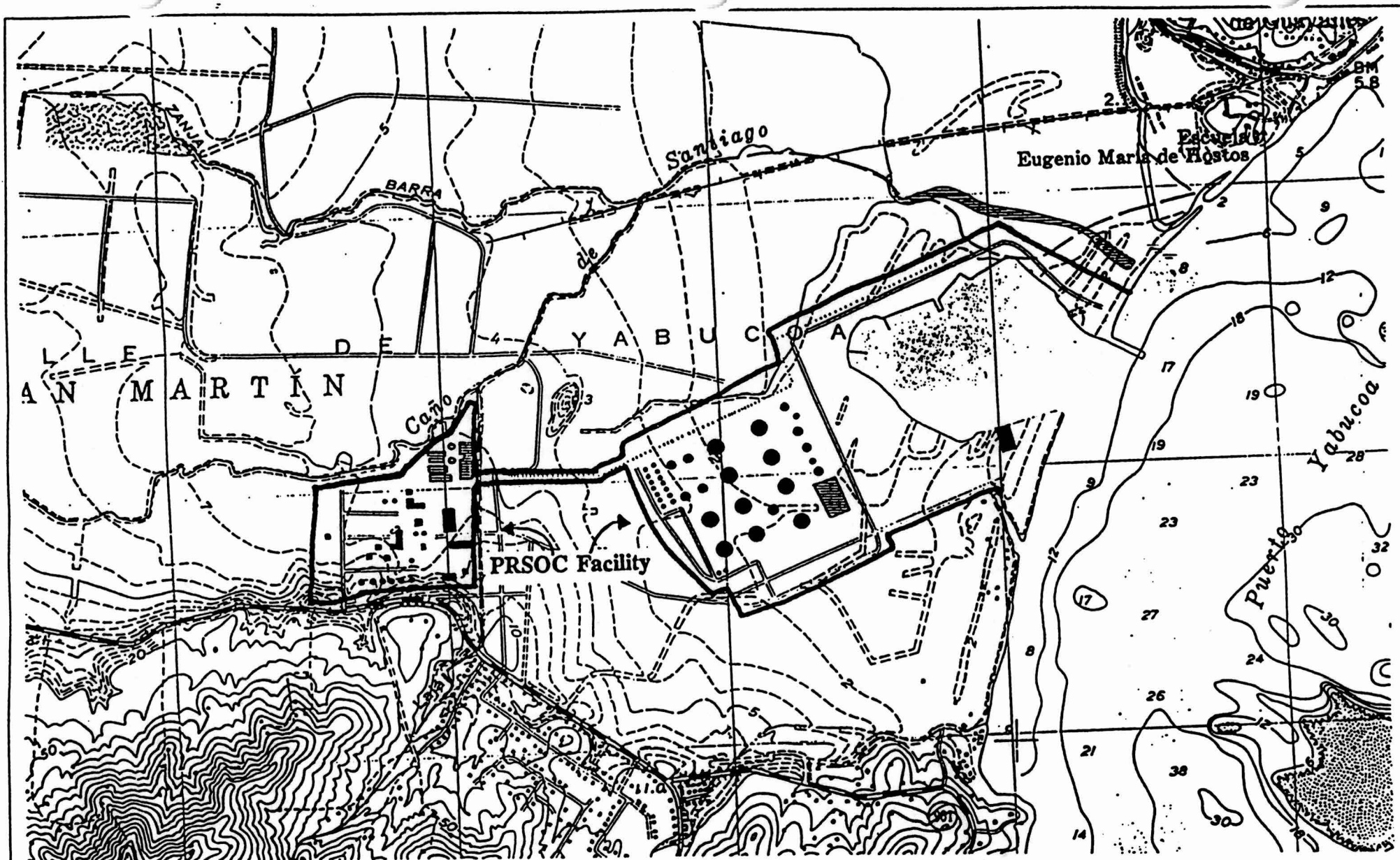
TANK FARM  
WASTE WATER TREATMENT AREA

TANK FARM AREA

MAIN ROAD

0 200 400  
SCALE  
1: 400'

2.	REVISED PER COMMENTS	7/10/95
1.	REVISED PER COMMENTS	6/22/95
No.	REVISION	DATE
		
SHELL CHEMICAL YABUCOA INC.		
LOCATION OF HAZARDOUS WASTE FACILITIES FIGURE 1-3		
SCALE - 1" = 400'	JOB No. - 109256-01	
DRAWN BY - A. TAYLOR	REV BY. - 7-19-95 TAY	
CHECKED BY - NB.	DWG. NAME - 109256J1	
DATE - 6/1/95	DWG. No. -	



SHELL CHEMICAL YABUCOA INC.

FIGURE 1-1

PRSOC FACILITY LOCATION

ANDERSON-MULHOLLAND & ASSOC., INC

SCALE AUTOCAD FILE # DATE

DR: CH:

Table 1-2. Hazardous Materials/Wastes Handled at the SCYI Facility, Yabucoa, Puerto Rico

	Material	Service	User	Container	Characteristics
1.	Difluoroethane	Catalytic Agent	LHT	Cylinder	Ignitability
2.	Chlorine (Solid)	Biocide	Util./Cooling Tower	Drum	Corrosivity
3.	Sulfuric Acid	pH Control	Cooling Tower	Drum	Corrosivity
4.	Caustic Soda	pH Control	Crude/LHT	Tank	Corrosivity
5.	Phosphoric Acid	Bacteria Nutrient	WWTA	Drum	Corrosivity
6.	Furfural	Solvent	Furfural	Tank	Listed (Ignitability)
7.	Methanol	Solvent	MEK	Drum	Listed (Ignitability)
8.	Acetone	Solvent	Laboratory	Drum	Listed (Ignitability)
9.	Toluene	Solvent	MEK	Drum	Listed
10.	Ocenol	Antifoam	LHT,	Drum	Ignitability
11.	Philm Plus WS55	pH Control	Crude	Drum	Corrosivity
12.	Philm Plus 5K2	Filming Amine	Crude	Drum	Ignitability
13.	Prochem 4H8	Neutralizing Amine	Crude	Drum	Corrosivity



Table 1-2.

## Hazardous Materials/Wastes Handled at the SCYI Facility, Yabucoa, Puerto Rico

	Material	Service	User	Container	Characteristics
14.	Betz 502-P	Corrosion Inhibitor	Cooling Tower	Tank	Corrosivity
15.	Embrake 2W157	Demulsifier	Crude Tower	Drum	Ignitability
16.	Prochem 3F18	Antifoulant	Crude	Tank	Ignitability
17.	Thermo Flo 7R19	Antifoulant	Crude	Tank	Ignitability
18.	MEA	H <sub>2</sub> S Absorber	LHT	Drum	Reactivity
19.	MEK	Solvent	MEK	Tank	Listed (Ignitability/ Toxicity)
20.	Perchloroethyleno	Catalytic Agent	Gasoline Reformer	Bin	Toxicity
21.	Betz 6493	Chelant	Boilers	Tank	Corrosivity
22.	K051	Waste	--	Marino Bag, Drum, Roll-off	Listed (Toxicity)
23.	F037/F038	Waste	--	Marino Bag, Drum, Roll-off	Listed (Toxicity)
24.	Spent Catalyst	Waste	--	Drum	Pyrophonic (Ignitability)



## INSPECTION AND SECURITY REQUIREMENTS

- 0 STORAGE FACILITIES MUST BE INSPECTED WEEKLY WHEN NOT IN USE AND DAILY WHEN IN USE.
- 0 STORAGE CONTAINERS (I.E. DRUMS) MUST BE IN GOOD CONDITIONS. IF NOT, MUST BE REPLACED.
- 0 CONTAINERS MUST BE COMPATIBLE WITH WASTE.
- 0 CONTAINERS MUST BE TRIPLE RINSED WITH PROPER SOLVENT BEFORE DISCARDING OR REUSING THEM.
- 0 MATERIAL NOT STORED IN CONTAINERS MUST BE INSPECTED FOR LEAKS, CORROSION, AND PROPER DISPOSAL.
- 0 STORAGE BUILDING ENTRANCE GATE, LOCKS, SIGNS, AND FENCES MUST BE INSPECTED.

# HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

PROPER D.O.T. SHIPPING NAME

---

IF FOUND, CONTACT THE NEAREST POLICE  
OR PUBLIC SAFETY AUTHORITY OR  
U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION:

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

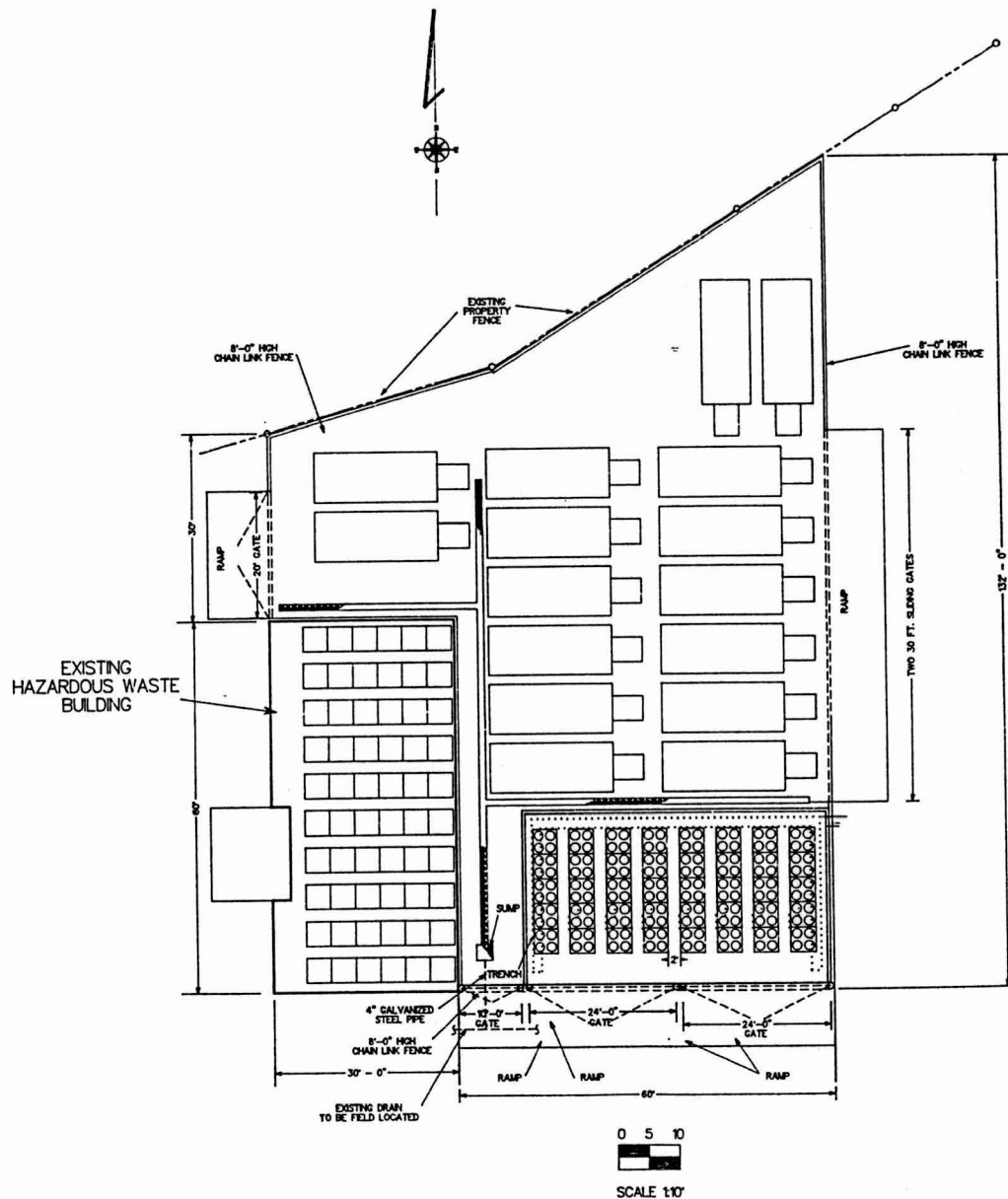
E.P.A. IDENTIFICATION NO. \_\_\_\_\_

MANIFEST DOCUMENT NO. \_\_\_\_\_

ACCUMULATION START DATE \_\_\_\_\_

CONTAINS HAZARDOUS OR TOXIC WASTES

# HANDLE WITH CARE!



### LEGEND

Capacity = 40 - 4' x 4' Pallets Containing  
4 - 55 Gal Drums Each = 160 Drums  
2 Tiers = 320 Drums

Capacity = 60 - 4' x 4' Pallets

Capacity = 16 Roll-Off Containers

3.	REVISED PER COMMENTS	7/10/95
2.	REVISED PER COMMENTS	6/2/95
1.	REVISED PER COMMENTS	5/23/95
No.	REVISION	DATE



**SHELL CHEMICAL YABUCOA INC.**

PROPOSED HAZARDOUS WASTE STORAGE AREA  
CONTAINER ARRANGEMENT  
FIGURE 3-1

SCALE - 1" = 10'	JOB No. - 109256-01
DRAWN BY - A. Taylor	REV BY. - ALT 7/10/95
CHECKED BY - N.B.	DWG. NAME - 1092565B
DATE - 5/18/95	DWG. No. -

# WASTE GENERATION SHEET

[illegible]

SIGNATURE OF PERSON MAKING REPORT

TABLE 1

INSPECTION SCHEDULE

<u>Facility/Equipment</u>	<u>Frequency of Inspection</u>
Container Storage Area	Weekly (When not in use) Daily (When in use)
• Container inspected for leaks and deterioration	
Hazardous Wastes Transfer Operations Systems	
• Operating Conditions	As necessary
• Condition of Equipment	Daily
• Piping/Valves	Weekly
Safety, Emergency, and Communications Equipment	Monthly
Security Devices	Weekly
Alarm Systems	Weekly

**Table 5-1. Description of the Hazardous Waste Storage Area Facility, SCYI Facility, Yabucoa, Puerto Rico.**

<b>Facility</b>	<b>Hazardous Waste Storage Area (HWSA)</b>
Location	Wastewater Treatment Area
Material Stored	Hazardous Materials and Wastes (Refer to Table 1-2)
Jurisdiction	Maintenance Department
Inspected by	Operations and Environmental Department
Frequency of Inspection	Daily <sup>(1)</sup>

<sup>(1)</sup> Daily inspection during routine operations, weekly inspection during normal and shutdown periods.

churn/oun/pr-bid/tbl-5-1

**Table 4**  
**INSPECTION LOG**

DATE: \_\_\_\_\_

TIME: \_\_\_\_\_

NAME OF INSPECTOR: \_\_\_\_\_

**I. HAZARDOUS WASTE STORAGE AREA**

**A. Liquid Storage Area**

1. Total containers in area: \_\_\_\_\_ drums
2. Containers properly labeled: \_\_\_\_\_; sealed \_\_\_\_\_; stacked \_\_\_\_\_.
3. Condition of containers: Acceptable \_\_\_\_\_; Replace \_\_\_\_\_
4. Is any Liquid in the sump: ( ) NO ( ) YES; Describe \_\_\_\_\_  
\_\_\_\_\_
5. Cracks in pad or curbing: ( ) NO ( ) YES
6. Minimum 2 ft. aisle width between rows: ( ) NO ( ) YES
7. Evidence of leakage from roof: ( ) NO ( ) YES
8. Signs, locks, gates, fence in good condition: ( ) NO ( ) YES

**B. Hazardous Waste Storage Building**

1. Total containers in area: \_\_\_\_\_ drums; \_\_\_\_\_ bags
2. Containers properly labeled: \_\_\_\_\_; sealed \_\_\_\_\_; stacked \_\_\_\_\_.
3. Condition of containers: Acceptable \_\_\_\_\_; Replace \_\_\_\_\_
4. Cracks in pad or curbing: ( ) NO ( ) YES
5. Minimum 2 ft. aisle width between rows: ( ) NO ( ) YES
6. Condition of wall and roof: \_\_\_\_\_
7. Signs, locks, gates, fence in good condition: ( ) NO ( ) YES

**C. Non-Liquid Hazardous Waste Storage Area**

1. Total containers in area: \_\_\_\_\_ roll-offs; \_\_\_\_\_ drums; \_\_\_\_\_ bags
2. Containers properly labeled: \_\_\_\_\_; sealed \_\_\_\_\_; stacked \_\_\_\_\_.
3. Condition of containers: Acceptable \_\_\_\_\_; Replace \_\_\_\_\_
4. Cracks in pad or curbing: ( ) NO ( ) YES
5. Minimum 2 ft. aisle width between rows: ( ) NO ( ) YES
6. Evidence of leakage from roof: ( ) NO ( ) YES
7. Signs, locks, gates, fence in good condition: ( ) NO ( ) YES

**D. General Comments/Recommendations**

\_\_\_\_\_

TABLE 5

HAZARDOUS WASTES TRANSFER SYSTEMInspection Form

Equipment Inspection			Actions/Comments Required
<u>Inspected</u>	<u>Items</u>	<u>Condition</u>	<u>(list on back if necessary)</u>
Vacuum Truck	Leakage Connections Breaks or Cracks in Suction or Discharge Lines		
Vacuum Truck Valves	Leakage Seal Integrity Corrosion		

---

Inspector's Signature

---

Time and Date

---

Reviewed by

---

Time and Date



## CONTINGENCY PLAN

- 0 ESTABLISHES EMERGENCY PROCEDURES FOR THE CONTROL OF HAZARDS TO HUMAN HEALTH, OR THE ENVIRONMENT, FROM FIRES, EXPLOSIONS, OR THE RELEASE OF HAZARDOUS WASTES.
- 0 IT IS PART OF THE SPILL PREVENTION CONTROL AND COUNTER-MEASURE PLAN (SPCC).
- 0 DESIGNATES AN EMERGENCY COORDINATOR. IN PRSOC, THE EMERGENCY COORDINATOR IS THE EMERGENCY OPERATIONS MANAGER (OR HIS/HER DESIGNEE).
- 0 FOLLOW REFINERY EMERGENCY PROCEDURES (FIRES, OIL SPILL, BODY INJURIES, ETC.).
- 0 PROVISIONS FOR CLEANING, TREATING, STORING, AND DISPOSAL OF ANY SPILLED HAZARDOUS WASTE.
- 0 REPORTING REQUIREMENTS TO EPA AND EQB:
  - DATE AND TYPE OF INCIDENT (E.G. FIRE, EXPLOSION, SPILL)
  - NAME AND QUANTITY OF MATERIAL SPILLED
  - EXTENT OF INJURIES
  - ASSESSMENT OF ACTUAL OR POTENTIAL HAZARDS
  - QUANTITY AND DISPOSITION OF RECOVERED MATERIAL

## THE MANIFEST

0 DOCUMENT USED FOR THE TRANSPORTATION OF HAZARDOUS WASTES.

0 INFORMATION THAT MUST BE INCLUDED:

- MANIFEST NUMBER

- PRSOC - I.D. NUMBER (PRD090074071) AND ADDRESS

- NAME AND I.D. FOR EACH TRANSPORTER

- NAME OF DISPOSAL FACILITY AND I.D. NUMBER

- DOT DESCRIPTION OF WASTE AND NUMBER

EX. <u>WASTE</u>	<u>HAZARD CLASS</u>	<u>UN No.</u>
ASBESTOS	ORM-C	UN-2590
CATALYST (KATALCO 52-1)	--	UN-2570
OILY SLUDGE	COMBUSTIBLE LIQUID	NA-1270
FURFURAL	COMBUSTIBLE LIQUID	UN-1199
PCB	ORM-E	UN-2315

- TYPE OF CONTAINER (01-DRUM, 02-TANKS, 03-BULK, 04-CARTONS,  
05-BAGS, 06-ROLL OF, 07-OTHER)

- TOTAL QUANTITY OF EACH WASTE TYPE

0 THE ENVIRONMENTAL ENGINEERING GROUP IS RESPONSIBLE FOR  
SIGNING THE MANIFEST AND ASSURING INFORMATION INCLUDED IS  
CORRECT.

0 GENERATOR RETAINS ONE COPY.

0 THE DISPOSAL FACILITY MUST SEND SIGNED COPY WITHIN 35 DAYS.  
(EXCEPTION REPORT TO EPA REQUIRED IF NOT RECEIVED IN 45  
DAYS).

0 KEEP MANIFEST FOR AT LEAST 3 YEARS.

0 BIENNIAL REPORT (MARCH).



Environmental  
Quality  
Board

COMMONWEALTH OF PUERTO RICO  
ENVIRONMENTAL QUALITY BOARD  
P.O. Box 11488, Santurce, Puerto Rico 00910

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2000-0404 Expires 7-31-8

UNIFORM HAZARDOUS WASTE MANIFEST		Generator's US EPA ID No.	Manifest Document No.	Page 1 of	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address			A.State Manifest Document Number			
4. Generator's Phone ( )			B.State Generator's ID			
5. Transporter 1 Company Name		6. US EPA ID Number	C.State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number	D.Transporter's Phone			
9. Designated Facility Name and Site Address		10. US EPA ID Number	E.State Transporter's ID			
			F.Transporter's Phone			
			G.State Facility's ID			
			H.Facility's Phone			
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)			12.Containers	13. Total	14. Unit	I. Waste No.
			No. Type	Quantity	M/Vol	
a.						
b.						
c.						
d.						
J. Additional Descriptions for Materials Listed Above			K.Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations. Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment.						
Printed/Typed Name			Signature		Date Month Day Year	
17. Transporter 1 Acknowledgement of Receipt of Materials			Signature		Date Month Day Year	
18. Transporter 2 Acknowledgement or Receipt of Materials			Signature		Date Month Day Year	
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.						

NTAL QUALITY BOARD (809) 722-0439

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

TRANSPORTER

FACILITY

## INSTRUCTION FOR THE UNIFORM HAZARDOUS WASTE MANIFEST

### General Information

The Environmental Quality Board requires proper completion of all information on a Manifest. Omissions, false coding or illegibility is considered a violation. All generators are responsible under EOB and Federal Law for the proper identification, labeling, manifesting and ultimate disposal of all hazardous waste they generate.

### Distribution

The hazardous waste manifest consists of eight copies. As the Manifest is complete the copies are removed from back to front. For shipments within the Commonwealth, the Generator and TSDf retain copies that are designed to be sent to the Generator State or Disposer State.

Copy 1	Disposer State - Mailed by TSDf	Copy 5	Transporter 1 - Retained by Transporter**
Copy 2	Generator State - Mailed by TSDf	Copy 6	Disposer State - Mailed by Generator
Copy 3	Generator - Mailed by TSDf	Copy 7	Generator State - Mailed by Generator
Copy 4	TSDf - Retained by TSDf	Copy 8	Generator - Retained by Generator

\*\*Note: If a continuing transporter is used, the generator is responsible for supplying him a legible photocopy, which must contain required signatures.

### Generator Section

Item 1 — Enter the generator's U.S. EPA twelve digit identification number and the unique five digit number assigned to this manifest (e.g. 00001) by the generator

Item 2 — Enter the total number of pages used to complete this Manifest, the first page (EPA Form 8700-22) plus the number. A continuation sheet is available for the instance in which more than two transporters are used or more than four waste are transported.

Item 3 — Self-Explanatory

Item 4-6 — Self-Explanatory

Item 7 — Enter the company name of the second transporter and if more than two transporters are used to transport the waste, use a Continuation Sheet (s) (EPA Form 8700-22A) and list the transporters in the order they will be transporting the waste.

Item 8 — Enter the US EPA twelve digit identification number of the second transporter identified in item 7. If more than two transporters are used, enter each additional transporter's company name and U.S. EPA twelve digit identification number in items 24-27 on the Continuation Sheet (EPA Form 8700-22A).

Item 9 — 10 — Self-Explanatory

Item 11 — Enter U.S. DOT Proper Shipping, Name, Hazard Class, and ID Number (UN/NA) for each waste as identified in 49 CFR 171 through 177.

If additional space is needed for waste descriptions, enter these additional descriptions in item 28 on the Continuation Sheet (EPA Form 8700-22A).

Item 12 — Enter the indicate number and type of containers (use whole numbers) for each waste and the appropriate abbreviation from Table I (below).

#### TABLE I TYPES OF CONTAINERS

DM - metal drums, barrels, kegs	DW - Wooden drums, barrels, kegs
DF - Fiberboard or plastic drums, barrels, kegs	TP - Tanks portable
TT - Cargo Tanks (tank trucks)	TC - Tank Cars
DT - Dump truck	CY - Cylinders
CM - Metal boxes, cartons, cases (including rollofts)	CW - Fiber or plastic boxes, cartons, cases

Item 13 — Enter the total quantity of waste described on each line.

Item 14 — Enter the appropriate abbreviation from Table II (below) for the unit of measure.

#### TABLE II - UNITS OF MEASURE

G - gallons (liquids only)	P - pounds	T - tons (2000 lbs)	Y - cubic yards
L - liters (liquids only)	K - kilograms	M - metric tons (1000 kg)	N - cubic meters

Item 15 — Generators may use this space to indicate special transportation, treatment, storage, or disposal information or Bill of Lading information. For international shipments generators must enter in this space the point of departure (City and State) for those shipments destined for treatment, storage or disposal outside the jurisdiction of the United States.

Item 16 — The generator must read, sign, (by hand) and date the certification statement. If a mode other than highway is used, the word "highway" should be lined out and the appropriated mode (e.g. and rail) inserted in the space below. EOB requires this additional information - shaded areas.

Item A — Not required

Item B — Enter Generator site address if different from mailing address. If same write in same.

Item C-E — Enter the State registration permit number and motor vehicle licence plate number of waste carrying portion of vehicle used to transport.

Item D and F — Self-Explanatory

Item G — Not required by EOB

Item H — Self-Explanatory

Item I — Enter the EPA hazardous waste numbers as assigned Part 366 (40 CFR 261 Subparts C and D).

Item J — If description in item 11 (a, b, c, d) contains NOS or other general term the hazardous waste constituent must be provided here for each. The specific gravity assumed to be 1.00 unless indicated in lower right of each box.

Item K — Enter the handling code for treatment, storage and disposal methods for each of the wastes described in item 11.

### TRANSPORTER SECTION

Item 17 — Enter the name of the person accepting the waste on behalf of the first transporter. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Item 18 — Enter, if applicable, the name of the person accepting the waste on behalf of the second transporter. That person must acknowledge acceptance of the waste described on the manifest by signing and entering the date of receipt.

### TSDf SECTION

Item 19 — The authorized representative of the designated (or alternate) facility's owner or operator must note in this space any significant discrepancy between the waste described on Manifest and the waste actually received at the facility.

<b>FORM</b> <b>1</b> <b>GENERAL</b>	 <b>EPA</b>	<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> <b>GENERAL INFORMATION</b> <i>Consolidated Permits Program</i> (Read the "General Instructions" before starting.)	<b>I. EPA I.D. NUMBER</b> F <span style="border: 1px solid black; display: inline-block; width: 100px; height: 1.2em; vertical-align: middle;"></span> D 1 2 3 4 5 6 7 8 9 10 11 12																																																						
<b>II. POLLUTANT CHARACTERISTICS</b> <p>INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column. If the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.</p> <table border="1" style="width:100%; border-collapse: collapse;"><thead><tr><th rowspan="2">SPECIFIC QUESTIONS</th><th colspan="3">MARK "X"</th><th rowspan="2">SPECIFIC QUESTIONS</th><th colspan="3">MARK "X"</th></tr><tr><th>YES</th><th>NO</th><th>FORM ATTACHED</th><th>YES</th><th>NO</th><th>FORM ATTACHED</th></tr></thead><tbody><tr><td>A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)</td><td></td><td></td><td></td><td>B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)</td><td></td><td></td><td></td></tr><tr><td>C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)</td><td></td><td></td><td></td><td>D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)</td><td></td><td></td><td></td></tr><tr><td>E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)</td><td></td><td></td><td></td><td>F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)</td><td></td><td></td><td></td></tr><tr><td>Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)</td><td></td><td></td><td></td><td>H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)</td><td></td><td></td><td></td></tr><tr><td>I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)</td><td></td><td></td><td></td><td>J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)</td><td></td><td></td><td></td></tr></tbody></table>		SPECIFIC QUESTIONS	MARK "X"			SPECIFIC QUESTIONS	MARK "X"			YES	NO	FORM ATTACHED	YES	NO	FORM ATTACHED	A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)				B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)				C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)				D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)				E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)				F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)				Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)				H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)				I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)				J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)				<b>GENERAL INSTRUCTIONS</b> If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.	
SPECIFIC QUESTIONS	MARK "X"			SPECIFIC QUESTIONS	MARK "X"																																																				
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED																																																		
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<b>III. NAME OF FACILITY</b> 1 <b>SKIP</b> 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100																																																									
<b>IV. FACILITY CONTACT</b> 1 <b>SKIP</b> 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100																																																									
<b>V. FACILITY MAILING ADDRESS</b> 1 <b>SKIP</b> 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100																																																									
<b>VI. FACILITY LOCATION</b> 1 <b>SKIP</b> 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100																																																									



## VIII. OPERATOR INFORMATION

A. FIRST 7 (specify)												B. SECOND 7 (specify)											
C. THIRD (specify)												D. FOURTH 7 (specify)											
VIII. OPERATOR INFORMATION																							
A. NAME																							
B. Is the name listed in Mark V D1-A, also the owner? <input type="checkbox"/> YES <input type="checkbox"/> NO																							
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: If "Other", specify.) F - FEDERAL M - PUBLIC (other than federal or state) S - STATE O - OTHER (specify) P - PRIVATE												D. PHONE (area code & no.)											
E. STREET OR P.O. BOX												F. CITY OR TOWN											
G. STATE												H. ZIP CODE											
I. INDIAN LAND Is the facility located on Indian lands? <input type="checkbox"/> YES <input type="checkbox"/> NO																							

## X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)												D. PSD (Air Emissions from Proposed Sources)											
E. UIC (Underground Injection of Fluids)												F. OTHER (specify)											
C. RCRA (Hazardous Wastes)												G. OTHER (specify)											
XL ASAP																							

Attach to this application a topographic map of the area extending for at least two miles beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

## XII. NATURE OF BUSINESS (provide a brief description)

## XIII. CERTIFICATION (see instructions)

I, the undersigned, certify that I am a duly qualified person to provide the information required by this application, and that, based on my best knowledge and belief, the information is true and correct. I believe that the information is true and correct, including the possibility of false and untruthful information.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
--	--------------	----------------

## XIV. INTENT FOR OFFICIAL USE ONLY

--	--

**III. PROCESSES – CODES AND DESIGN CAPACITIES**

**A. PROCESS CODE** – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the form (Item III-C).

**B. PROCESS DESIGN CAPACITY** – For each code entered in column A enter the capacity of the process.

- 1. AMOUNT** – Enter the amount.
- 2. UNIT OF MEASURE** – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
<u>Storage:</u>			<u>Treatment:</u>		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS	OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY
<u>Disposal:</u>					
INJECTION WELL	D79	GALLONS OR LITERS			
LANDFILL	D80	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D81	ACRES OR HECTARES			
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	H
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	F
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	B
GALLONS PER DAY	U	LITERS PER HOUR	U		

C	DUP										T/A	C	1				
LINE NUMBER	A. PROCESS CODE (from list above)			B. PROCESS DESIGN CAPACITY				FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)			B. PROCESS DESIGN CAPACITY				FOR OFFICIAL USE ONLY
				1. AMOUNT (specify)		2. UNIT OF MEASURE (enter code)							1. AMOUNT		2. UNIT OF MEASURE (enter code)		
X-1	S	0	2	600		G			5								
X-2	T	0	3	20		E			6								
1									7								
2									8								
									9								
4									10								

### III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

### IV. DESCRIPTION OF HAZARDOUS WASTES

- A. EPA HAZARDOUS WASTE NUMBER** — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.
- B. ESTIMATED ANNUAL QUANTITY** — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.
- C. UNIT OF MEASURE** — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS.....	P	KILOGRAMS.....	K
TONS.....	T	METRIC TONS.....	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure to account the appropriate density or specific gravity of the waste. -9 int

### D. PROCESSES

#### 1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item II to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

**NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER** — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

- Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
- Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

**EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below)** — A facility will treat and dispose of an estimated 900 pound per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO. J Z	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above



Continued from page 2.  
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

**EPA I.D. NUMBER** (enter from page 1)

	T/A	C
W	DUP	2 DUP

## DESCRIPTION OF HAZARDOUS WASTES (continued)

[illegible]

#### IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)											
9	8	7	6	5	4	3	2	1	0	T	C
F											6

#### V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

#### VI. PHOTOGRAPHS

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

#### VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)										LONGITUDE (degrees, minutes, & seconds)									
45	46	47	48	49	50	51	52	53	54	72	73	74	75	76	77	78	79		

#### VIII. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER										2. PHONE NO. (area code & no.)									
E										11 12 13 14 15 16 17 18 19 20									
3. STREET OR P.O. BOX										4. CITY OR TOWN									
F										G									
5. ST.										6. ZIP CODE									
11 12 13 14 15 16 17 18 19 20										21 22 23 24 25 26 27 28 29 30									

#### IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED

#### X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED

